

Pre-AP Geometry **Date** _____ **5.3 Assignment**
Medians and altitudes of a triangle (pp 279–281) Page 1
 1. What is your name?

Use the diagram shown and the given information to name each segment as one of the special segments of a triangle.

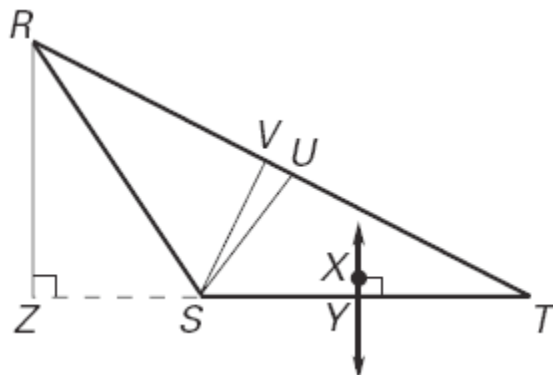
$$m\angle RSV = m\angle TSV, RU = UT, \text{ \& } \overline{SY} \cong \overline{TY}$$

2. \overline{RZ}

3. \overline{SV}

4. \overline{SU}

5. \overline{XY}



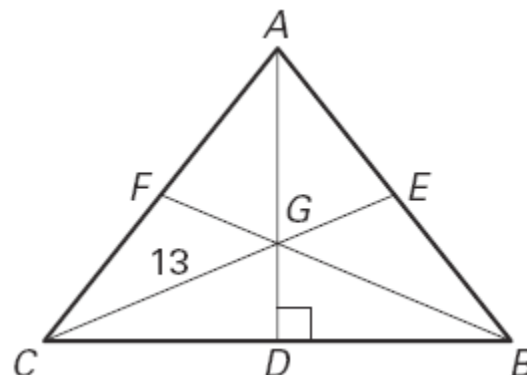
Use the figure shown and the given information. G is the centroid of $\triangle ABC$, $AD = 15$, $CG = 13$, & $\overline{AD} \perp \overline{CB}$.

6. Find AG.

7. Find GD.

8. Find CD.

9. Find GE.



10. Find GB.

11. Find the perimeter of $\triangle ABC$.



Pre-AP Geometry Date_____ 5.3 Assignment
Medians and altitudes of a triangle (pp 279–281) Page 2
Write S if the sentence is sometimes true, A if the statement is
always true, and N if the statement is never true.

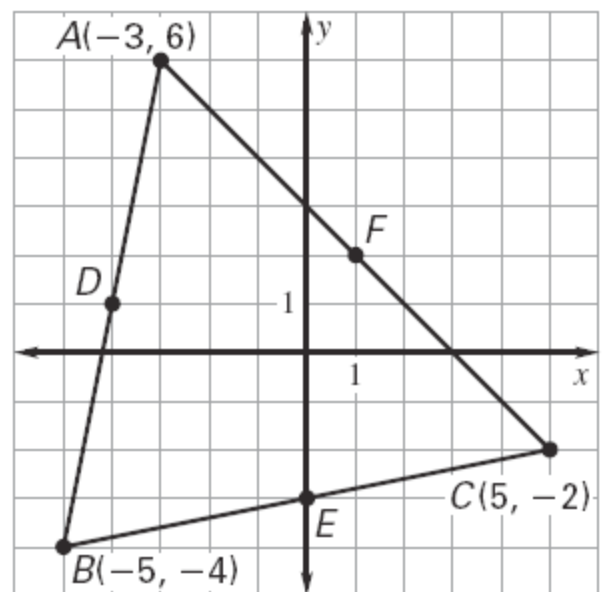
12. The centroid of a triangle is the _____ circumcenter of the triangle.
13. The altitude from the vertex angle of an isosceles triangle is _____ the median.
14. The median to any side of an equilateral triangle is _____ the angle bisector.
15. The altitudes of an acute triangle _____ intersect outside the triangle.

Use the graph shown.

16. Find the coordinates of D, the midpoint of \overline{AB} .

17. Find the length of the median, CD.

18. Determine the equation of line \overline{CD} .

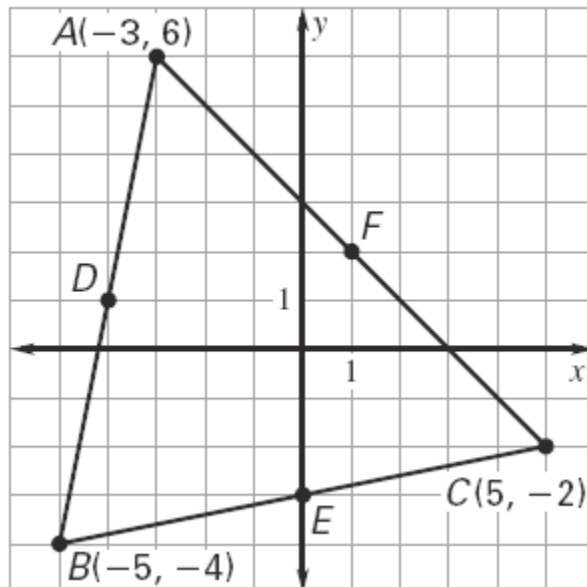


19. Find the coordinates of the centroid. Label this point at G.

Pre-AP Geometry Date_____ 5.3 Assignment
Medians and altitudes of a triangle (pp 279–281) Page 3
 20. Find the coordinates of E, the midpoint of \overline{CB} .

21. Determine the equation of \overline{AE} .

22. Show that $\frac{AG}{AE} = \frac{2}{3}$.



23. Determine the point of intersection of \overline{CD} & \overline{AE} . Is the point of intersection G?

Review.

Write an equation of the line that passes through point P and is parallel to the line with the given equation. (Chapter Section 3)

24. P(1, 7); $y = -x + 3$

25. P(4, -9); $y = 3x + 5$

Pre-AP Geometry Date_____ 5.3 Assignment
Medians and altitudes of a triangle (pp 279–281) Page 4

Write an equation of the line that passes through point P and is parallel to the line with the given equation. (Chapter Section 3)

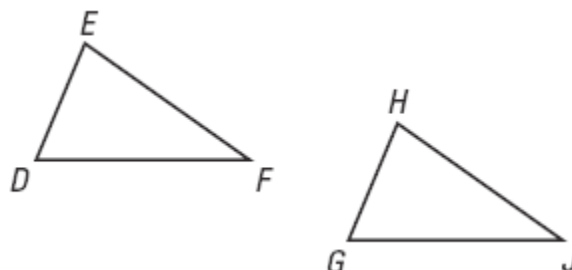
26. $P(-3, -8); y = -2x - 3$

27. $P(4, -2); y = -\frac{1}{2}x - 1$

State the third congruence that must be given to prove that $\triangle DEF \cong \triangle GHJ$ using the indicated postulate or theorem. (Chapter 4 Section 4)

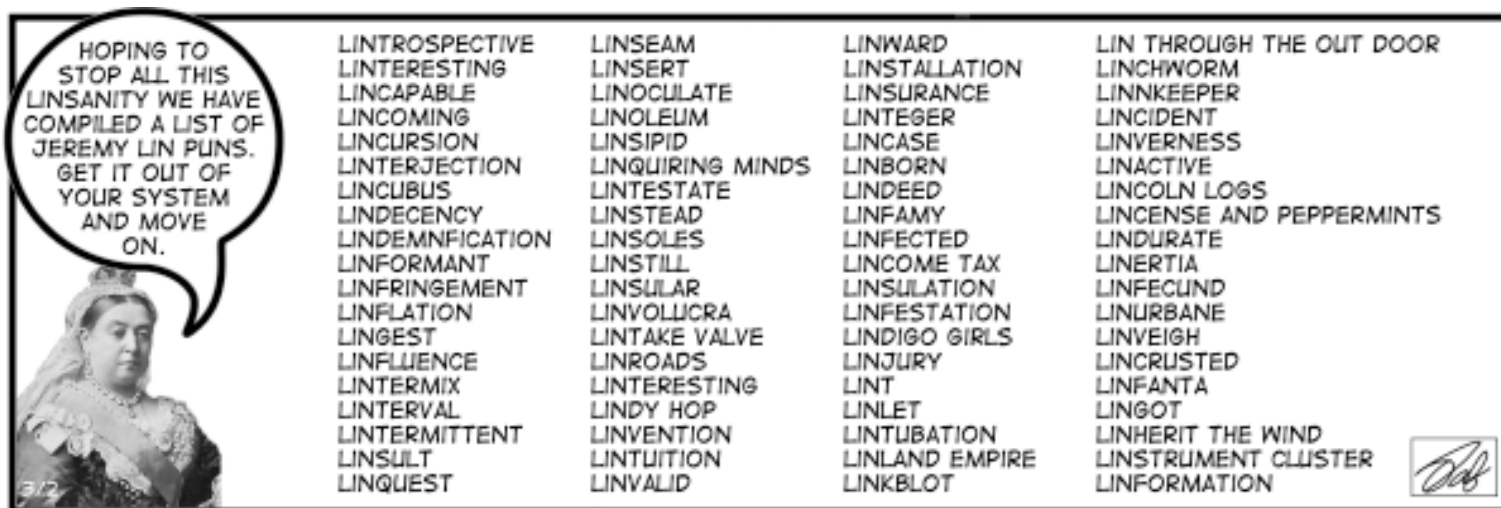
28. Given: $\angle D \cong \angle G$
 $\overline{DF} \cong \overline{GJ}$

AAS Congruence theorem



29. Given: $\angle E \cong \angle H$
 $\overline{EF} \cong \overline{HJ}$

ASA Congruence Postulate



Pre-AP Geometry Date _____ 5.3 Assignment
Medians and altitudes of a triangle (pp 279–281) Page 5

30. Place a right triangle with legs of length 9 units and 13 units in a coordinate plane and find the length of the hypotenuse. (Chapter 4 Section 7)

